Latent Semantic Analysis and the Chymistry of Isaac Newton

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The Chymistry of Isaac Newton

Isaac Newton, like Albert Einstein, is a quintessential symbol of the human intellect and its ability to decode the secrets of nature. Newton's fundamental contributions to science include the quantification of gravitational attraction, the discovery that white light is actually a mixture of immutable spectral colors, and the formulation of the calculus. Yet there is another, more mysterious side to Newton that is imperfectly known, a realm of activity that spanned some thirty years of his life, although he kept it largely hidden from his contemporaries and colleagues. We refer to Newton's involvement in the discipline of alchemy, or as it was often called in seventeenth-century England, "chymistry." Newton wrote and transcribed about a million words on the subject of alchemy. Newton's alchemical manuscripts include a rich and diverse set of document types, including laboratory notebooks, indices of alchemical substances, and Newton's transcriptions from other sources.

Enlarged Portion of Babson 416, Page Two

FEATURED MANUSCRIPTS

- Of Natures obvious laws & processes in vegetation
- Sr George Ripley His Epistle to K Edward
- Of ye first Gate

SITE TOOLS

Latent Semantic Analysis

Computational tools to aid analysis of the language and projects encompassed in Newton's alchemical manuscripts.

Index Chymicus

Alphabetically sorted, user-friendly version of Newton's Index Chemicus (Keynes 30-1) manuscript.

...more

Alchemy and Optics | Mineral Acids | Transmutation

PREPRINT ARTICLE:

"Newton's Early Optical Theory and its Debt to Chymistry"

This article provides the first evidence that Newton's radical discoveries in the realm of light and color owed a significant debt to his alchemical research.

With the support of the National Science Foundation and the National Endowment for the Humanities, The Chymistry of Isaac Newton is producing a scholarly online edition as one part of an integrated project that includes new research on Newton's chymistry. Currently, the project focus is to build a repository of searchable transcriptions with page images. Our ultimate goal is to provide complete annotations for each manuscript and comprehensive interactive tools for working with the texts.

This material is based upon work supported by the National Science Foundation under Grant Nos. 0324310 and 0620868 and by the National Endowment for the Humanities under Grant No. RZ-50798. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation or the National Endowment for the Humanities.

Keynes MS. 91, King's College Library, Cambridge University

<1r> Page Image

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1

The Pondus in Dissecting the Subject Matter;

every Distillation is something better than halfe a Bushel; and ten of those goe to the making of an Egge; which is about six Bushels; that yields in the Wintertime more Superior Waters, than in the summer, and soe doth the Subject Matter afford. some more than othersome, one being more rich than another; but it generally gives of Superior Waters about four Pounds, and of the Inferior about fourteen pounds, and some odd Ounces.

In Calcining the Caput Mortuum, the white flowers which Sublime in the Retort from those Ten Distillations are about Ten and at the most Twelve Ounces; and the vineger Thirty six, or forty Ounces: And as to the Red Earth, 'tis about Twenty eight or Thirty Pounds, which gives not above fourteen Ounces or a Pound of vitriolick Salt.

<The following three lines are in Newton's hand.>

In these recconings a pound is taken for 16 ounces Troy.
The spirit of wine of 10 destillations weighed 3pound 2ounce 1drachm weight
or 50 1/20 ounces Troy, besides the corrosive oyle.

Having in the former Experiments gone through some
Truth some Errors, & the whole both in Practice & Theory
Indigested I shall now come (as Experience hath
Ripen'd my Understanding) to give a certain & Loyal
Process of the true Proceeding of the which (Blessed be God) I
am fully satisfied that I am a Master; therein I shall
show not onely the Formation of the Body, but allso its
Animation & Exaltation by a Successive Number of
Eagles, & allso continue the Hunting of the Green. Lyon: and
allthough I call the Blood the Green. Lyon, which is more
properly the Fiery Dragon, which holds the Magical Chalybs in his
own Belly i.e. an Incombustible white Mercurial Oyl, which
is Produced by the fire of Union or dry Water, or that ♃
which Congeals ☿ in its mercurial Pondus, freeing it from its
Hydropical water (tho' the Body is form'd by the white & Red Earth,
in the Prepared Spermy water, as hath been several times -
shown; and likewise Assatiated which the Sublimate & vineger
which is still Legal & true) yet without the Antimonial and
Sulphureous fire, or Philosophic Lune & Pontanus's fire
which is truly & properly the Green Lyon, no Exaltation can
be made: for as they Act in Unity one with another,

soe

<2v> Page Image

So are the Names Convertible, according to the Alteration of
the Compound: and indeed tis no matter what the Names
are, things themselves being rightly Understood: Dunstan saith
That Green - Lyon, White fume & Assa faetida are one thing
which is not onely the Property of our dry Water, not wetting the
hand, & yet a Sulphureous fire; but allso of the blood & Red
[unknown] when distil'd; but this must not be Distill'd, untill
of such Strength, that the Spirit may be Separated from the Blood;
but must be Exalted by a Natural Process: the whole Mystery

Philal. in Rip. ... p. 354 ... Edw. Grid p 26, 27. Pro ... planetarum loco sit ... proprio primi ordinis Ripl. p. 151. Theat. 3 Britan. p. 112. Philal in Ripl Port p. 354.

Ægyptus humidalis Persia siccitalis regio. Ind. Ægyptus et Persia pro ... Bonus Venetiensis p. 638. Anonym. in Arte chimiæ vol. 1. p. 250.

Aer vapor metallicus Nov. Lum. p 57, 59, 63 mercurius volatilis Mairr emb. p. 2. Mercurius ... novum vel aureum Novum Lum. p. 68, 69. Elementum ... Senior p. 74. Mairr Sept. Phil. p. 108. Hydrargyro ... p. 28. Ripl. p. 146. Stanz. 13 olei seu Spiritus vocat Antiol. p. 275 ... alij passim. Metallum ex ... philosophicus Instr. apert. p. 5, 10, 11.

Æs (Venus, Salon) ponitur generaliter pro Sulphure. Vide Rosarius minor p. 670 & Anonymus in Th. Ch. vol. 3 p. 16. Omne ... est aurum ... est æs sed omne æs non est aurum, quia differunt ut genus et species. Et alij: Æs philosophorum est aurum eorum. Et Menabdus in Turba serm 25 in vol 4 Theat. Chem. dicit Æs quod vos jussi regere sunt ista quatuor corpora & Flamellus Annot. p. 783. Venus est corpus, & verbus, Venus sunt ista quatuor corpora. Ponitur ... pro metallis, tam imperfectis quam perfectis, ut pro ferro et plumbo ... Th. Ch. vol. 2. p 237. pro auro vel nostro vel vulgi. ib. et Turba p. 16. pro Elixire rubro tingente Th. Ch. v. 2 p. 232 & v. 3 p. 162. pro corpore quod in ... coquitur, et maxime pro elemento terra id est sale fixo seu Salona Scalabarda. Turba p. 5, 6, 12, 13, 16, 17, 20, 23, 24, 38. ... ut et ... pro materia ad vinci

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Philal. in Ripl. Port. p. 9, 194. pro auro nostro Edw. Generosus p. 26, 27. Pro plumbo rubro seu lapide perfecto primi ordinis Ripl. p. 151. Theat. Britan. p. 112. Philal in Ripl Port p. 354.

Aegyptus humiditatis Persia siccitatis regio. Inde Aegyptus & Persia pro humido et sicco, ☿ et 🜂. Bonus Ferrariensis p. 638 Anonym. in Arte Aurif. vol. 1. p. 250.

Aer vapor metallicus Nov. Lum. p. 57, 59, 63 mercurius volatilis Maier Embl. p. 2. Mercurius partium novem vel decem, Novum Lum. p. 68. 69. Elementum olei seu spiritus rubri Aristot p 275 Senior p. 74. Maier. Sept. Philos. p. 108. Hydropyro <*illeg.*> p. 28. Ripl. port. 6 Stanz. 13 & Alii passim. Metallum ex quo fit aer philosophicus Intr. apert. p. 5, 10, 11.

Aes (Venus, Laton) ponitur generaliter pro sulphure. Unde Rosarius minor p. 670 & Anonymus in Th. Ch. vol. 3 p. 16, & Rosar. maior p. 242 & Joannes Sawtre p 21 Omne aurum est aes sed omne aes non est aurum, quia differunt ut genus et species. Et alii: aes philosophorum est aurum eorum. Et Menabdus in Turba serm 25 in vol 5 Theat. Chem. dicit aes quod vos jussi regere sunt ista quatuor corpora & Flamellus Annot. p. 783. Venus est corpus, & rursus, Venus sunt ista quatuor corpora. Ponitur itaque pro metallis tam imperfectis quam perfectis ut pro ferro et plumbo Th. Ch. vol. 2. p 237 Aurora Consurg. p 141 pro auro vel nostro vel vulgi. ib. et Turba p 16. pro Elixire rubro tingente Th. Ch. V. 2 p. 232 & v. 3 p. 162. Scala p. 162 pro corpore quod in ☿ coquitur Turba p. 5, 6, 16 et maxime pro elemento terrae id est sale fixo seu Latona dealbanda. Turba p. 5, 6, 12, 13, 16, 17, 20, 23, 24, 38, Allegor. Sapient. p. 80. Micreris p. 92. Scala p 80 l. 4, 7, 11. Consil conjug. p. 73, 74, 75. Maier Embl. p. 37, 39. uti et pro materia ad viriditatem cocta Rosar p. 143 Clangor p. 305, 311. Turba p. 17. et pro aqua mercuariali quae de sulphure participat. Turba p. 24. aes

The Chymistry of Isaac Newton

Index Chemicus

Aes

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Alchemical Glossary

ALL | 0-9 | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | ...

- **Adept:**

  A highly experienced chymist, often specifically one who has successfully prepared grand arcana like the philosophers' stone.

- **Alembic:**

  A distillation head comprising a dome to collect the vapors rising from a boiling substance (generally held in an attached curcubit) and a gutter and beak to channel the condensed vapors into a receiver. Used in preference to a retort for distilling volatile materials.

- **Alkahest:**

  A solvent described by Van Helmont that is supposedly able to divide all substances into their component ingredients and then reduce these further into their primordial water.

- **Ambergris (or "ambergreece"):**

  A fragrant secretion of the sperm whale, used in perfumes.

- **Aqua fortis:**

  Literally, "strong water," an acid generally prepared in Newton's day by distilling saltpeter with oil of vitriol or with vitriol itself. The aqua fortis of commerce was composed primarily of nitric acid.

- **Aqua regia:**

  Literally, "royal water," an acid capable of dissolving gold, usually prepared in the early modern period by dissolving sal ammoniac in aqua fortis, and today by mixing a three-to-one ratio of hydrochloric acid and nitric acid.

- **Aqua vitae:**

  Literally, "water of life"; generally distilled alcohol.

- **Arcanum, arcana:**

The "Oyl of Vitriol"

Don b. 15 pp.4r & 7r:

> "Oyle of Vitrioll is acid destild from vitrioll first calcined to whitenesse for feare of boyling over when it . The fumes are white but sattle into this reddish liquor."

Newton has another description of the process in the same manuscript on p.8v:

> "Spt of Vitrioll & Oyle. Deflegm ye vitrioll &c a <illeg> yt circulatory fire till after melting it coagulate into a grayish lump wch is done in 2 howers. A glass retort half filld wth this poudered, & urged into a large receiver till black veines begin to trickle downe. Then change ye receiver but lute it not on. A pound yeilds 9 or 10 ℥cs of transparent spirit, 1 1/2 ℥ of black oyle, & ye remaining colcothar (caput mortuum) conteins a fixed salt of ♀. The spt & oyle differ but in their flegm: ffor a drachm of spt dropt into common water ℥i, & filtered makes ye spt."

The English chymist and physician John French (1616-1657) described a similar method for the production of oil of vitriol, and he also included a picture of the apparatus used for distilling various mineral acids.

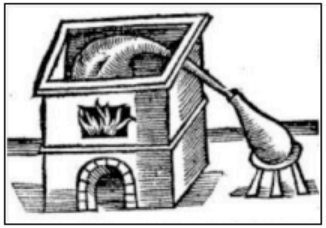


Fig. 1: French's furnace and distillation apparatus. *The Art of Distillation* (London, 1653), p.64.

French describes the process as follows:

> "Take of Hungarian, or the best English Vitrial, as much as you please, let it be melted in an earthen vessell glazed, with a soft fire, that all the moisture may exhale, continually stirring of it, untill it be brought into a yellow powder, which must be put into a glasse Retort well luted, or an earthen Retort that will endure the fire: Fit a large Receiver to the Retort and close the joints wel together; then give it fire by degrees till the second day, then make the strongest heat you can til the Receiver which before was dark with fumes be clear again; let the Liquor that is distilled off be put into a little Retort, and the flegm be drawn off in sand, so will the oil be rectified, which is most strong and ponderous, and must be

Latent Semantic Analysis (LSA)

Text Analysis by Linear Algebra and Singular Value Decomposition (SVD)

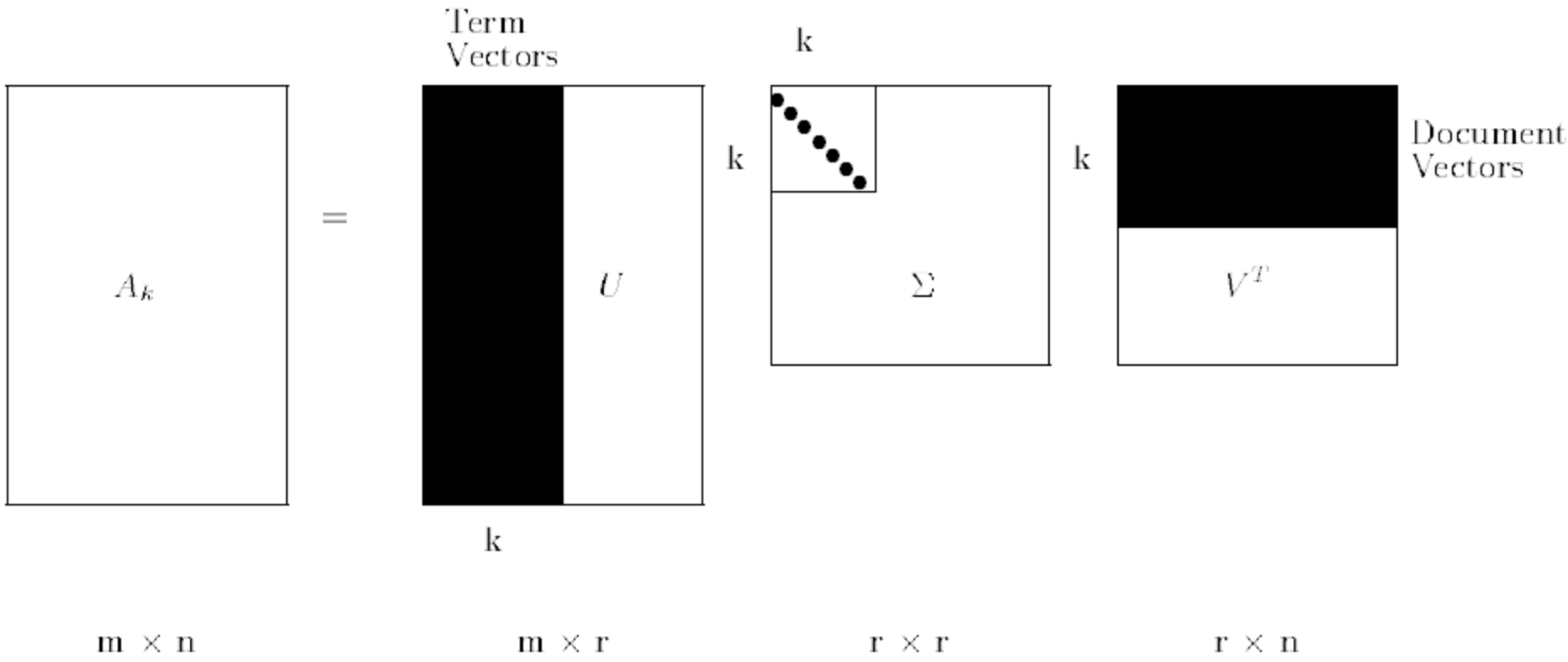
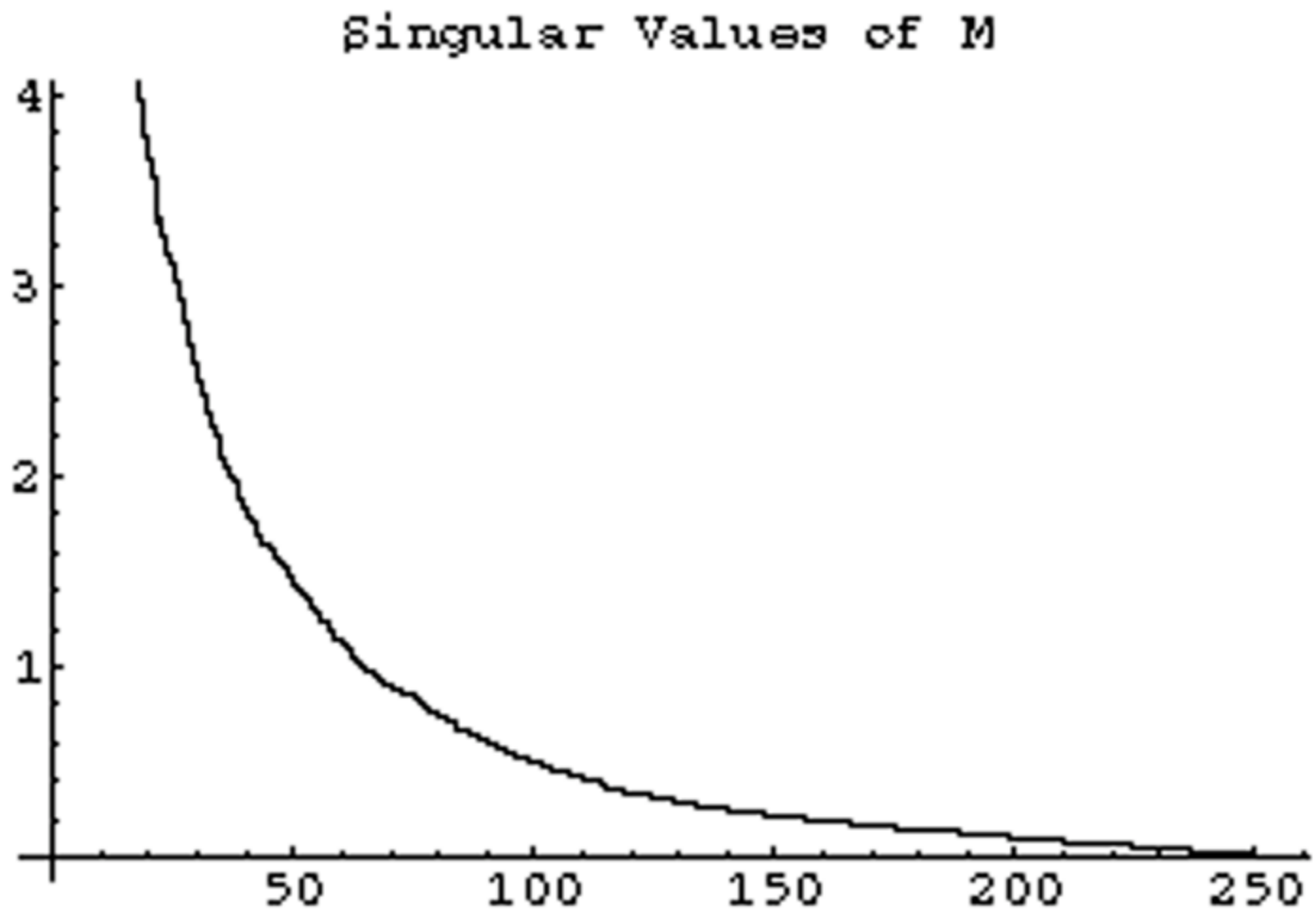


FIG. 1. *Mathematical representation of the matrix* A_k.


Singular Values of M
4
3
2
1
50
100
150
200
250

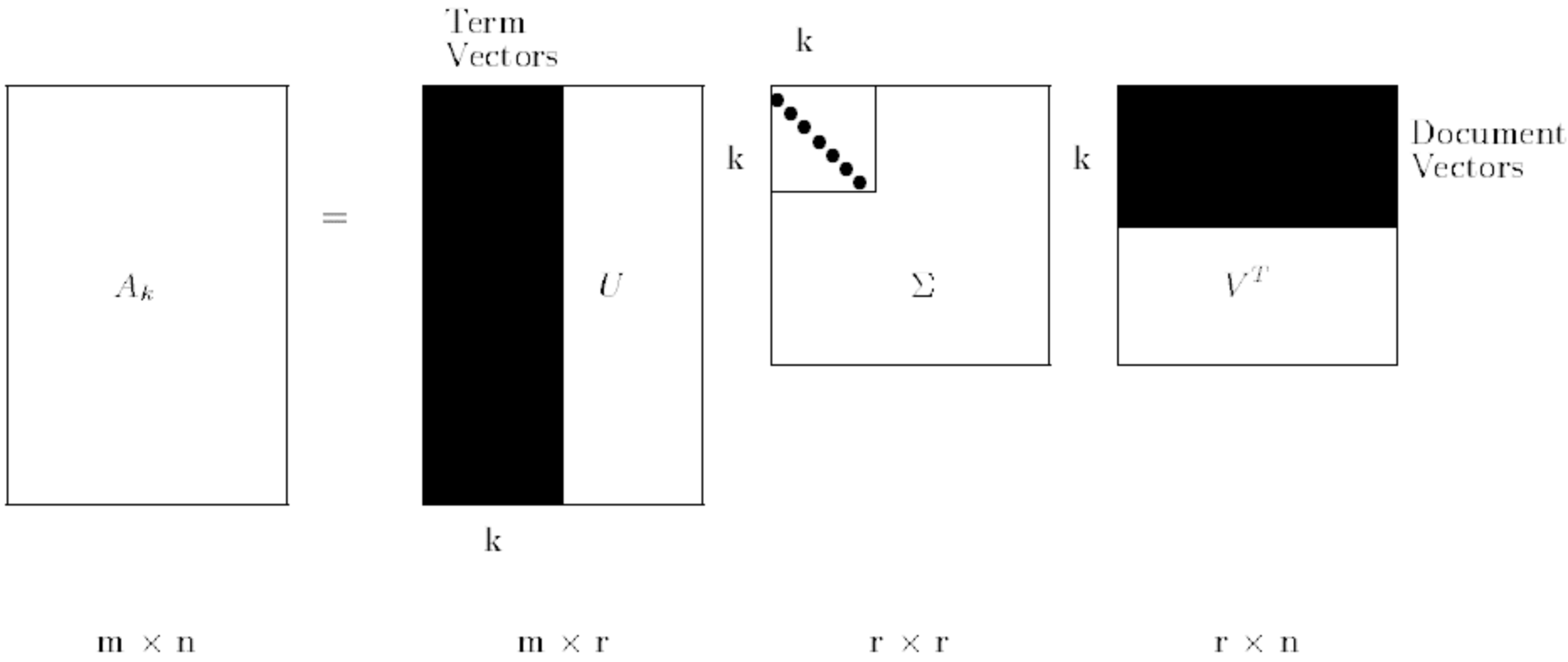


FIG. 1. *Mathematical representation of the matrix* A_k.

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Note: *To see the alchemical symbols correctly, install the Gentium Newton TTF font* (GenR102-Newton-ansi.tff) *on your machine.*

Download font zip file here. Font works on Windows, Macintosh and Linux.

To view and modify network graphML files, download and install Newtwork Workbench (NWB).

Chymistry of Isaac Newton Latent Semantic Analysis Tools

View document and term correlations

Search type:

- (•) Document-document correlations.
- ( ) Chunk-chunk correlations.
- ( ) Term-term correlations.
- ( ) Term-chunk (Doc) correlations.
- ( ) Chunk (Doc)-term correlations.
- ( ) Compose a query using terms.
- ( ) Compose a query using chunks.

Chunk size:

- (•) Use 250-word chunks.
- ( ) Use 1000-word chunks.

Ouput type:

- (•) List results in descending order.
- ( ) List results for one document in page order.
- ( ) List results by term alphabetically.
- ( ) List results in document catalog order.
- ( ) Networked graph of correlations for NWB.
- ( ) CSV for Excel XY of Term↔Doc correlations.

Scope of correlated pairs to return:

- (•) Return all correlations above the selected correlation value.
- ( ) Return only correlations between selected documents or terms.
- ( ) Return correlations within one document. (Doc-Doc only.)
- ( ) Return all and report the presence of terms. (Term↔Doc only.)
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Set up search

Open a new LSA viewer window.

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Open a new LSA viewer window.

Documents:
All documents — Choose one or more or ALL. Add document to query set

Query set:

Clear query set

Run Search

Lowest document-document correlation value to inspect:
0.9

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Chymistry of Isaac Newton **Latent Semantic Analysis Tools**

View document and term correlations

All documents
Keynes MS. 12
Keynes MS. 13
Keynes MS. 14
Keynes MS. 15
Keynes MS. 16
Keynes MS. 17
Keynes MS. 18
Keynes MS. 19
Keynes MS. 20
Keynes MS. 21
Keynes MS. 22
Keynes MS. 23
Keynes MS. 24
Keynes MS. 25
Keynes MS. 26
Keynes MS. 27
Keynes MS. 28
Keynes MS. 29
Keynes MS. 31

Keynes MS. 16 Choose one or more or ALL. Add document to query set

Ouput type:

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ts for one document in page order.
ts by term alphabetically.
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Query set:

Keynes MS. 16

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Set up search

Open a new LSA viewer window.

Documents:
Keynes MS. 21 Choose one or more or ALL. Add document to query set

Query set:
Keynes MS. 16
Keynes MS. 21

Clear query set
Run Search

Lowest document-document correlation value to inspect:
0.9
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2

Documents:

Keynes MS. 21 Choose one or more or ALL. Add document to query set

Query set:

Keynes MS. 16
Keynes MS. 21

Lowest document-document correlation value to inspect:

0.4

0.962510	Keynes MS. 21, f.008v	Yahuda MSS. Var. 259 MS. 4, f.4.3v_2
0.943946	Keynes MS. 21, f.012v	Keynes MS. 34, f.002r_2
0.937308	Keynes MS. 21, f.012r	Keynes MS. 34, f.002r_2
0.936803	Keynes MS. 21, f.010r_2	Keynes MS. 55, f.019v
0.936629	Keynes MS. 21, f.012v	Keynes MS. 51, f.003v
0.932446	Keynes MS. 21, f.012r	Stanford M132/2/6, f.001v
0.929817	Keynes MS. 21, f.009r	Yahuda MSS. Var. 259 MS. 4, f.4.4r
0.919286	Keynes MS. 21, f.012r	Keynes MS. 51, f.003v_3
0.918690	Keynes MS. 21, f.014v_2	Keynes MS. 61, f.002v
0.916556	Keynes MS. 21, f.012r	Keynes MS. 51, f.003v
0.913219	Keynes MS. 19, f.002v_3	Keynes MS. 21, f.009r

http://webapp-test.dlib.indiana.edu/newton-dev/mss/dipl/ALCH00015/#f1r (new window)

DOC-ID: ALCH00015
COLL-MS: Keynes MS. 26, f.001r
MS-TITLE: On Munday March 2d or Tuesday March 3 1695/6, A

Londoner acquainted wth Mr Boyle

FOLIO[[1r]]FOLIO On Munday March 2d or Tuesday March 3 1695/6 ,
Londoner acquainted with Mr. Boyle & Dr Dickinson making
me a visit, affirmed that in the work of Jodichus a Rhe
with ☿ twas not necessary that the ☿ should be purified
but the oyle or spirit might be taken as sold in shops
without so much as rectifying it. That the fire does not
destroy the life of the Oyle or Spirit in distilling it from
the ADD[[red hot]]ADD Vitriol. That two or three pounds of Oyle or Spirit
will not afford above half an ounce of DEL[[sp]]DEL fixt salt &
that the oyle affords more fixt salt then the spirit.
That the white spirit is in appearance like rain water
only sweet & fragrant, & that Dr Twisdens spirit as
Iodichus described it to him was genuine. That the white spirit
must be rectified seven times from its faex without
separating any flegm from it, & that in rectifying, it
will endure any heat without losing its life. That the remaining matter for
extracting the soul must ADD[[not]]ADD be calcined to a
red heat, but only well dryed, least the soul fly away.
That for extracting the soul the spirit must be digested
on this matter not two months but only till it appear well
coloured with the extracted soul. That when you draw
off the spirit from the soul you must leave the soul
not thick DEL[[but]]DEL like honey or butter but thinner then oyle
so that you may pour it clean out of your glass
like a liquor & that it will keep better in moisture then
when too dry & therefore tis safest to err on that hand

http://webapp-test.dlib.indiana.edu/newton-dev/mss/dipl/ALCH00114/#f1r (new window)

DOC-ID: ALCH00114
COLL-MS: Schaffner Series IV Box 3 Folder 10, f.001r
MS-TITLE: 1. A Londoner acquainted wth Mr Boyle & Dr Dickinson

FOLIO[[1r]]FOLIO
1. Londoner acquainted with Mr Boyle & Dr Dickinson , affirmed that in the
work with ☿ twas not necessary that the ☿ should be purified, but the Oyle or
Spirit might be taken as sold in shops ADD[[without so much as rectifying it
]]ADD . That two or thre pound
will not afford above 1/2 an ounce of salt & that the Oyle holds more
salt then the spirit. ADD[[3a]]ADD That the white spirit DEL[[was]]DEL is in
appearance like rain
water, only sweet & fragrant & that DEL[[the]]DEL Dr Twisden 's spirit as
described
it to him was genuine. ADD[[3c]]ADD That the white spirit must be rectified 7
times
from its faex with out separating any flegm from it. That the remaining
matter for extracting the soul DEL[[d]]DEL must not be calcined to a red heat
but
only well dried least the soul fly away. That the spirit must be digested
DEL[[(not 40 days]]DEL on this matter (not DEL[[40 days]]DEL two months
but only) till it appea r
well coloured with the extracted soul. ADD[[5]]ADD That DEL[[the]]DEL
when all the soul is
extracted the remaining matter must be put in a crucible DEL[[under a]]DEL
covered with a muffle or hollow cap of iron like DEL[[the]]DEL a bowl
inverted & a fire made ADD[[round]]ADD about them for an hour, which
cannot easily
be to hot. Then the salt extracted with the spirit of the matter calcined
again & extracted again as before DEL[[till no ADD[[more]]ADD salt]]DEL &
so on till no
more salt can be extracted. ADD[[4]]ADD That when you draw off the spirit
from the

http://webapp-test.dlib.indiana.edu/newton-dev/mss/dipl/ALCH00079/#f2r (new window)

DOC-ID: ALCH00079
COLL-MS: Dibner MS. 1024 B SCDIRB, f.002r
MS-TITLE: Ex Fabri Hydrographo Spagyrico.

// Hæc ambo conjunguntur et ex conjunctione masculi huius & puellæ virginis nascitur semen seu fons noster. Ibi tunc temporis in matrimonio celebrando pondus est considerandum. Ex qualicunque enim pondere non oritur semen seu fons prolificus sed ex certo ac determinato pondere. Itaque par pondus utriusque materiæ in nostro primo matrimonio celebrando est adhibendum. In secundo autem matrimonio dum pars volatilis parti fixæ & permanenti conjungitur pondus etiam est perpendendum. Nam pars fixa necesse est ut dissolvatur ac diluatur et aqua fiat a parte volatili. Ideo major esse debet in quantitate pars volatilis quam ipsa pars fixa Aliqui chemicorum ponunt decem partes aquæ super unam corporis fixi alii quatuor. Modò pars fixa dissolvatur a parte volatili hoc ego existimo vere sufficere. Nam deinde per coctionem perennem & continuam coagulatur pars DEL[[fixa]]DEL ADD[[volatilis]]ADD a parte DEL[[volatili]]DEL fixa. Si sit maxima quantitas partis volatilis retardatur coagulatio unde his qui causam nesciunt contingit desperatio. Ego tamen non observavi pondus sed materias conjunxi et maxima quantitate partis volatilis partem fixam dissolvi & deinde in balneo Mariæ aut levissimo cinerum calore superfluam volatilis materiæ partem extraxi donec tenacem vidi materiam viscosam et valde nigram. Tunc vas repagulo satus firmo obsignavi et tempori ad coquendum tradidi, benedixitque Deus & incrementum dedit. Est etiam pondus observandum in multiplicatione. Nam opus album et rubrum perpotandum est et irrigandum suo spiritu seu fonte nostro crudo, sed puro et septies destillato. Ibi pondus est observandum ne Elixir submergatur. Parcè admodum irrigandum ut materia cooperiatur tantùm gladii spissitudine : quod multoties est

http://webapp-test.dlib.indiana.edu/newton-dev/mss/dipl/ALCH00117/#f3r (new window)

DOC-ID: ALCH00117
COLL-MS: Royal Society MM/6/5, f.003r_2
MS-TITLE: Extracts from 'Faber' (Pierre Jean Fabré) and other alchemical writers

eorum substantijs. Poculum // ergo istud aqua est quæ in intimis eorum substantijs latitat. Hæc sola aqua fratrem nostrum et sororem nostram copulat et jungit ut ambo juncti progignant fœtum nostrum Adonidem & Ganimedem qui enutriendus est ut ad perfectam ætatem deveniat.
Faber Panchym p 674, 675

Par pondus utri usque materiæ in nostro primo matrimonio celebrando est adhibendum. In secundo autem matrimonio dum pars volatilis parti fixæ & permanenti conjungitur pondus etiam est perpendendum Nam pars fixa necesse est ut dissolvatur ac diluatur et aqua fiat a parte volatili. Ideo major esse debet in quantitate pars volatilis quam ipsa pars fixa. Aliqui chemicorum ponunt decem partes aquæ super unam corporis fixi alij septem alij quatuor. Modo pars fixa dissolvatur a parte volatili hoc ego existimo vere sufficere. Nam deinde per coctionem perrennem & continuam coagulatur pars volatilis a parte fixa. Si sit maxima quantitas partis volatilis retardatur coagulatio, unde his qui causam nesciunt contingit desperatio. Ego tamen non observavi pondus sed materias conjunxi et amxima quantitate partis volatilis partem fixam dissolvi & deinde in balneo Mariæ aut levissimo cinerum calore superfluam volatilis materiæ partem extraxi donec tenacem vidi materiam viscosam & valde nigram. Tunc vas repagulo satis firmo obsignavi & tempori ad coquendum tradidi, benedixitque Deus & incrementum dedit. Est etiam pondus observandum in multiplicatione. Nam opus album & rubrum perpotandum est et irrigandum suo spiritu seu

http://webapp-test.dlib.indiana.edu/newton-dev/mss/dipl/ALCH00025/#f2r (new window)

DOC-ID: ALCH00025
COLL-MS: Keynes MS. 36, f.002r_2
MS-TITLE: De Metallorum Metamorphosi

// autem hoc est semen Auri. Neutiquam verò existimare licet ☿em ☿is habere semen, ♄um ♄i , & sic de caeteris DEL[[sed]]DEL (forma puta ☿ali ♄nina ♂tiali , Haec est accidentalis
at materia (pura) est aurea cui nihil deest praeter digestionem. In cunctis ergo metallis
imperfectis est semen aureum ad perfectionem tendens at in itinere suo per accidens
impeditum; inque auro digesto est idem semen proximè inclusum in perfectione triumphans
Quare si quaeratur semen ex imperfectis metallis educere, (remotum longe cùm sit licet
verè existens) labor futurus erit frustraneus: Ad solem puta cuncta exaltari necessum
est, aliter semen (quod est rei perfectio) ex illis non DEL[[elicitur]]DEL excernitur. Semen volo
non ☿um qui est in omnibus & ex illis educendus est ad vim illam in qua et per quam multiplicantur. ♄ autem non in ♄o at in ☉ro solo est multiplicabilis, cum nimirum ad aurum pervenerit ut de se postea semen suum i.e. virtutem digestissimam
emittat ut ex hac multiplicatio ortum suum habeat. Lunae tamen (quia perfecta est et Elixir albae projectioni inserviens exhibet) semen suum inesse quispiam facilè
crederet. Et datur quidem semen multiplicativum album pariter ac rubeum, hoc tamen
album in renibus DEL[[solis]]DEL tantum ADD[[solis]]ADD continetur. Mater lapidis primo solem albedine sua dealbat
unde proles quae ex hisce duobus parentibus consurgit albescit primò ad imitationem formae
maternae & tum perfectum est semen multiplicativum ad album postea rubescit rubedine

http://webapp-test.dlib.indiana.edu/newton-dev/mss/dipl/ALCH00063/#f4.1v (new window)

DOC-ID: ALCH00063.04
COLL-MS: Yahuda MSS. Var. 259 MS. 4, f.4.1v
MS-TITLE: Novum Lumen Chymicum . Sendivogij. Divi Leschi genus amo .

usus nisi resolvatur calido vapore. //

Semen est triplex Animale quod ex imaginatione cognoscitur.

Vegitabile vulgare est ut videmus in fructibus; Quod nobis ostendit quomodo natura creat illud ex 4 Elementis. Nam Hyems putrefacit congelando spiritus vitaeles in Arboribus quos cum calor Solis (humiditatis attractivus) resolvit, tum calor
naturae per motum excitatus pellit ad circum ferentiam vaporem aquae subtilem
qui poros arboris apperiendo, & guttas stillare facit, semper purum ab impuro seperando impurum abit in folio & corticem purum in flores & fructum congelantur ; Veluti pomum in quo sperma est ex quo nascitur arbor, sed in spermate est semen vel granum intrinsece ex quo etiam nascitur argor natu multiplicatio non est in spermate sed in semine.

Tertio Minerale Semen quod non creditur quia invisibile nec mirum cum quod prae oculis est non percipiens ignari. Tamen quod superius est est sicut id quod inferius
est & quod inferius (generatur ex semine) sicut id quod superius est. Nihil nascitur &
crescit sine semine sed mortuum est. Metalla sic generantur: Elementa 4 stillant
per Archeum Naturae vaporem aquae ponderosum in centrum Terrae qui est semen
metallorum & dicitur mercurius praeter sive fluxibilitatem & unus quisque quinque

0.898798	Keynes MS. 38, f.010v	Ransom HRC 129, f.003v
0.898677	Keynes MS. 48, f.038r_2	Keynes MS. 48, f.050r
0.898675	Babson MS. 419, f.001r_2	Babson MS. 419, f.001v
0.898636	Yale Cushing/Whitney Yale Ms., f.008v	Yale Cushing/Whitney Yale Ms., f.010r_2
0.898563	Keynes MS. 13, f.001r	Keynes MS. 13, f.003v
0.898398	Portsmouth Add. MS. 3975, f.065v	Portsmouth Add. MS. 3975, f.066v
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0.898098	Countway B MS c 41 a), f.006r	Countway B MS c 41 a), f.006v_2
0.898082	Babson MS. 417, f.024v_2	Babson MS. 417, f.026v
0.897927	Keynes MS. 26, f.001r	Schaffner Series IV Box 3 Folder 10, f.001r
0.897895	Dibner MS. 1070 A SCDIRB, f.014v_2	Royal Society MM/6/5, f.006r_2
0.897882	Yahuda MSS. Var. 259 MS. 4, f.4.2r	Yahuda MSS. Var. 259 MS. 4, f.4.2v
0.897828	Keynes MS. 30/1, f.016r	Keynes MS. 30/1, f.049v
0.897825	Babson MS. 417, f.028v	Babson MS. 417, f.032r
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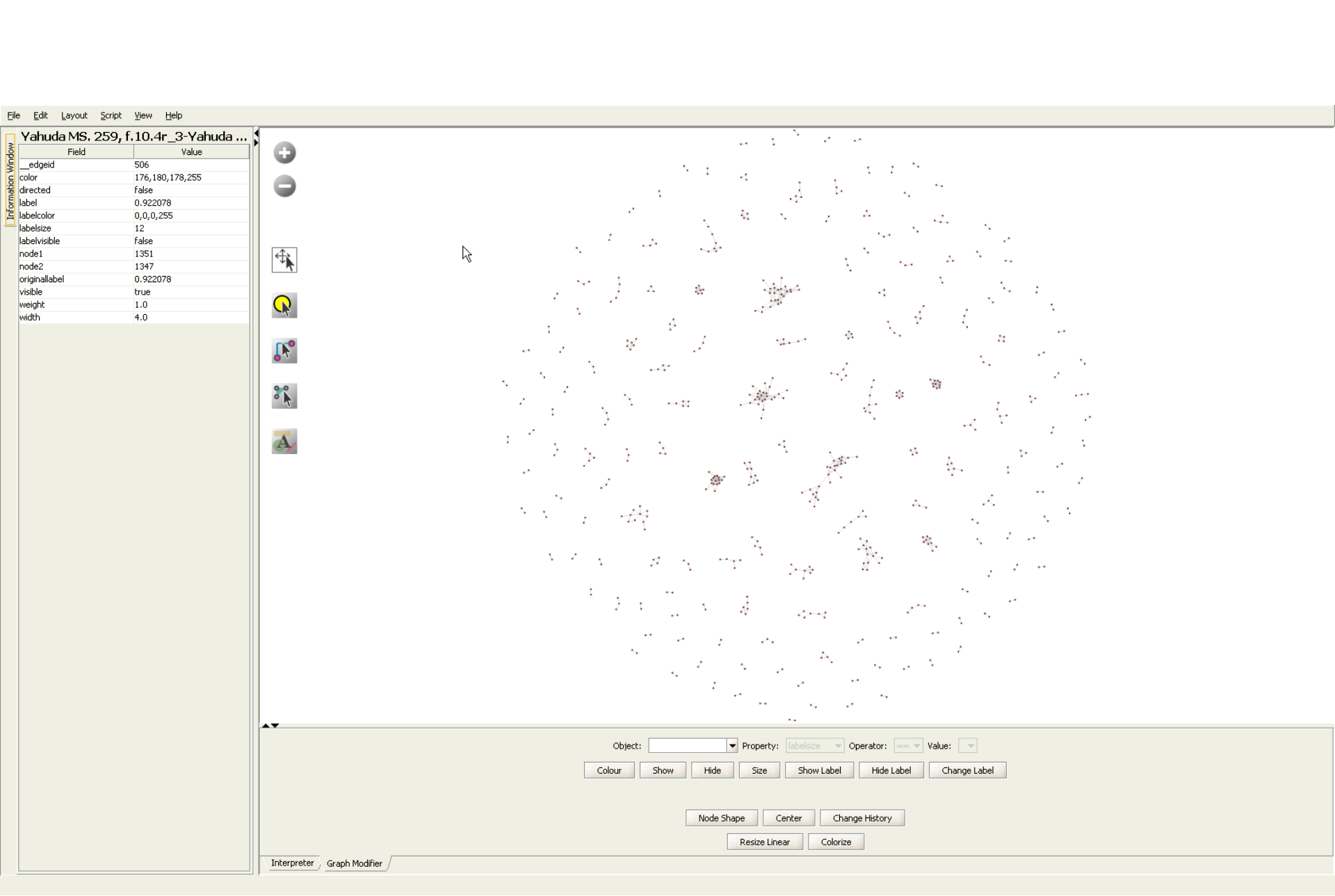
NetworkWorkbench
A Workbench for Network Scientists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visible true
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width 4.0
Object:
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labelsize
Operator:
Value:
Colour
Show
Hide
Size
Show Label
Hide Label
Change Label
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Change History
Resize Linear
Colorize
Interpreter
Graph Modifier

File Edit Layout Script View Help

Information Window

Keynes MS. 41, f.01...

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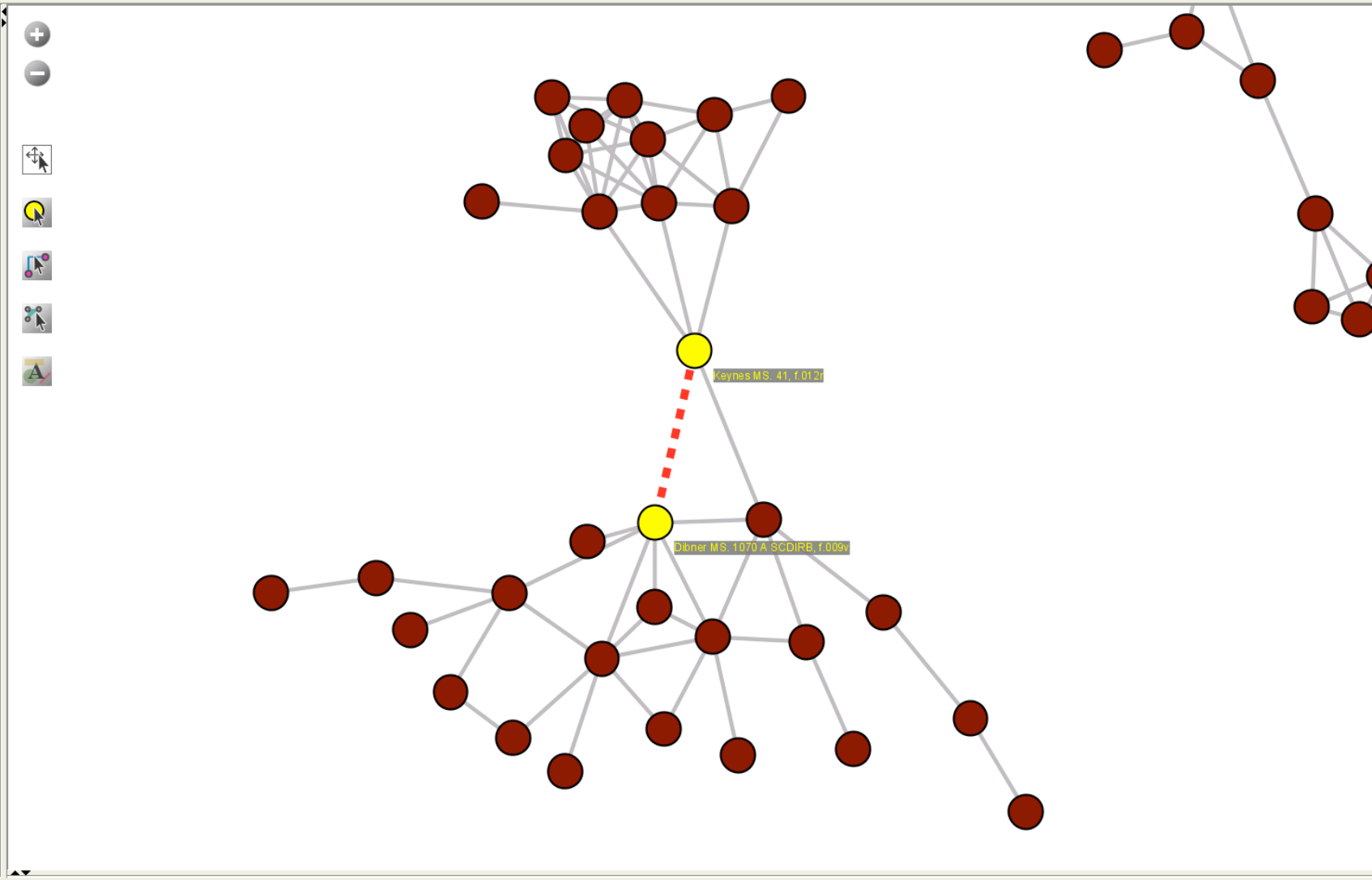

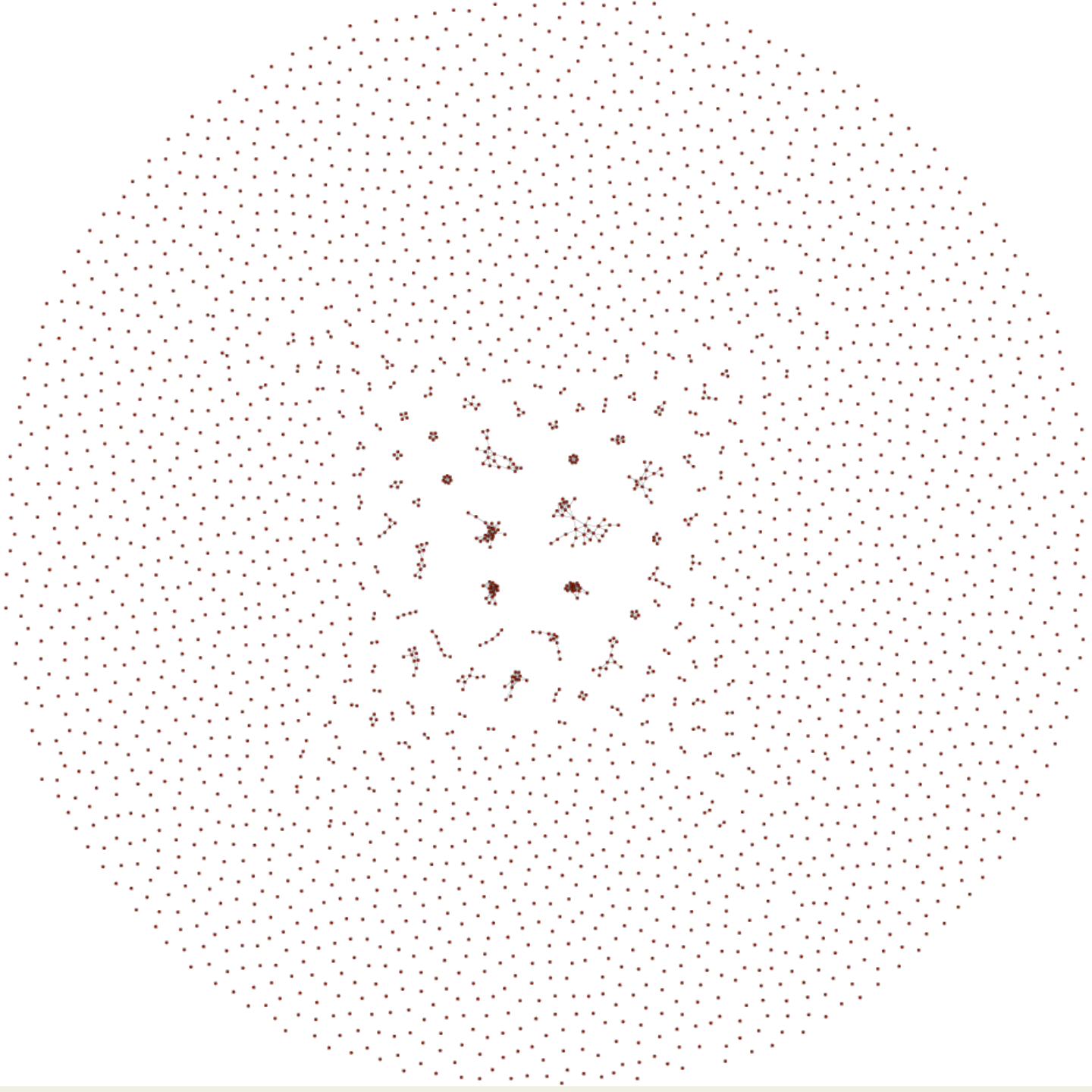

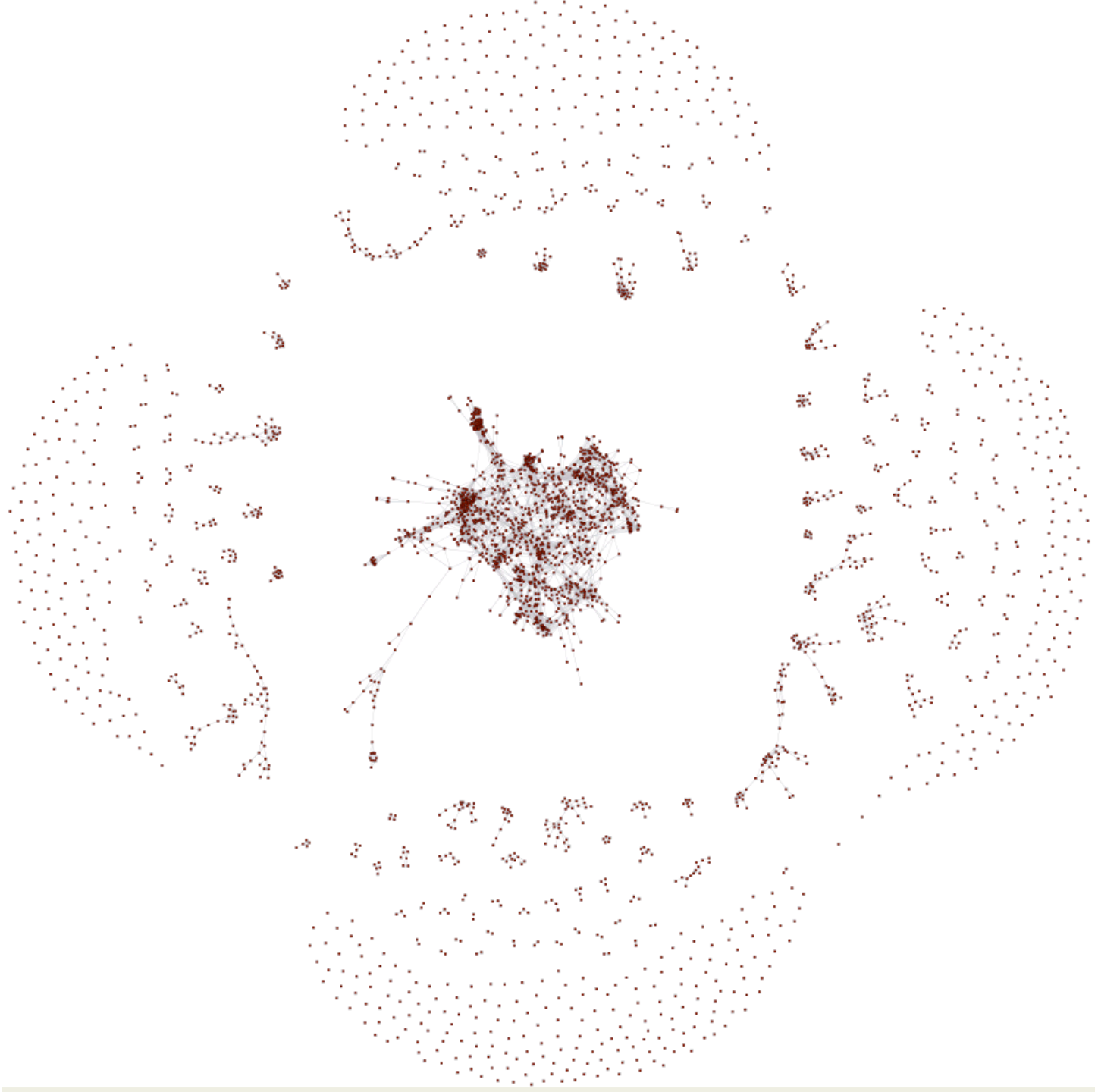

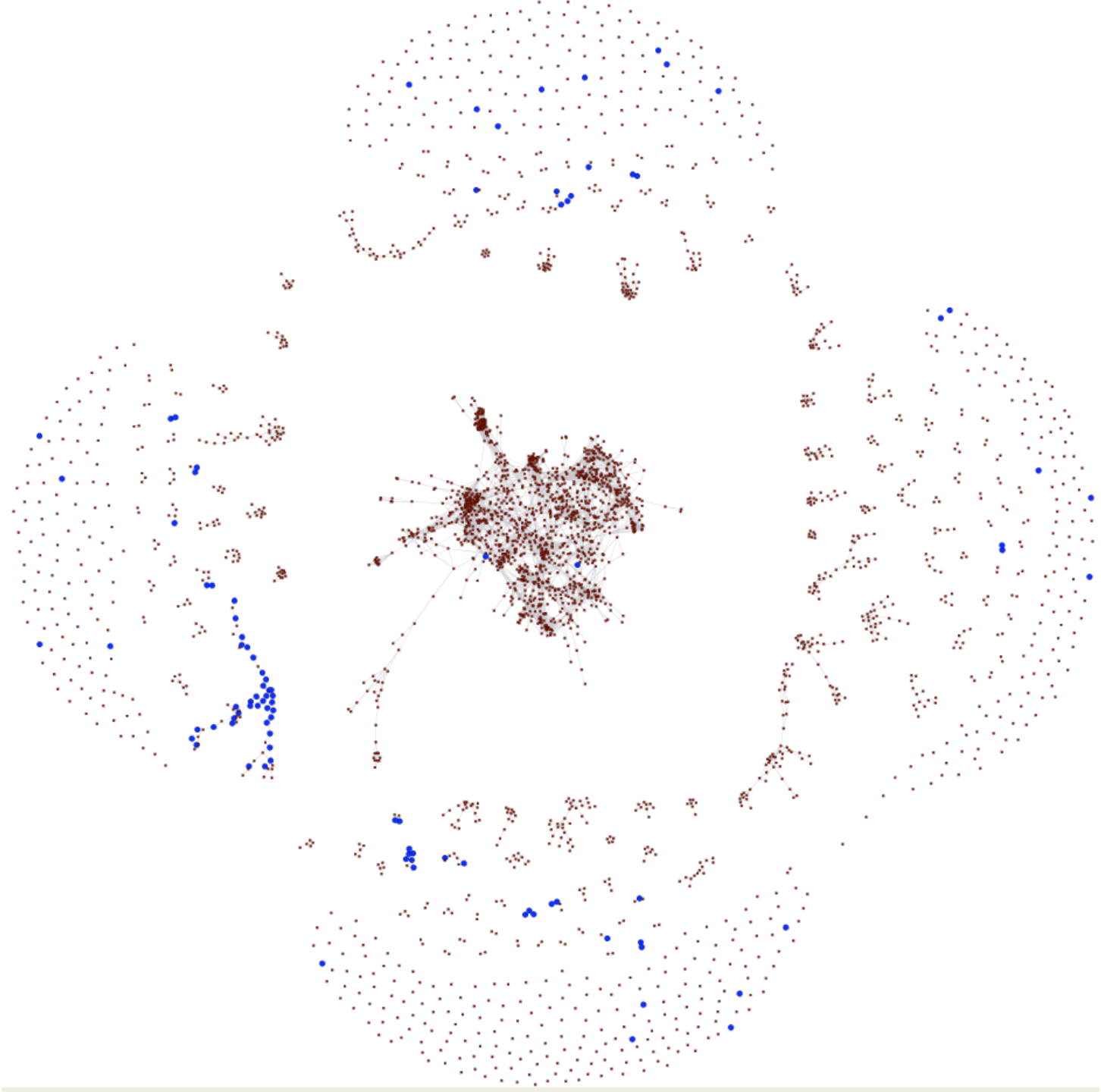

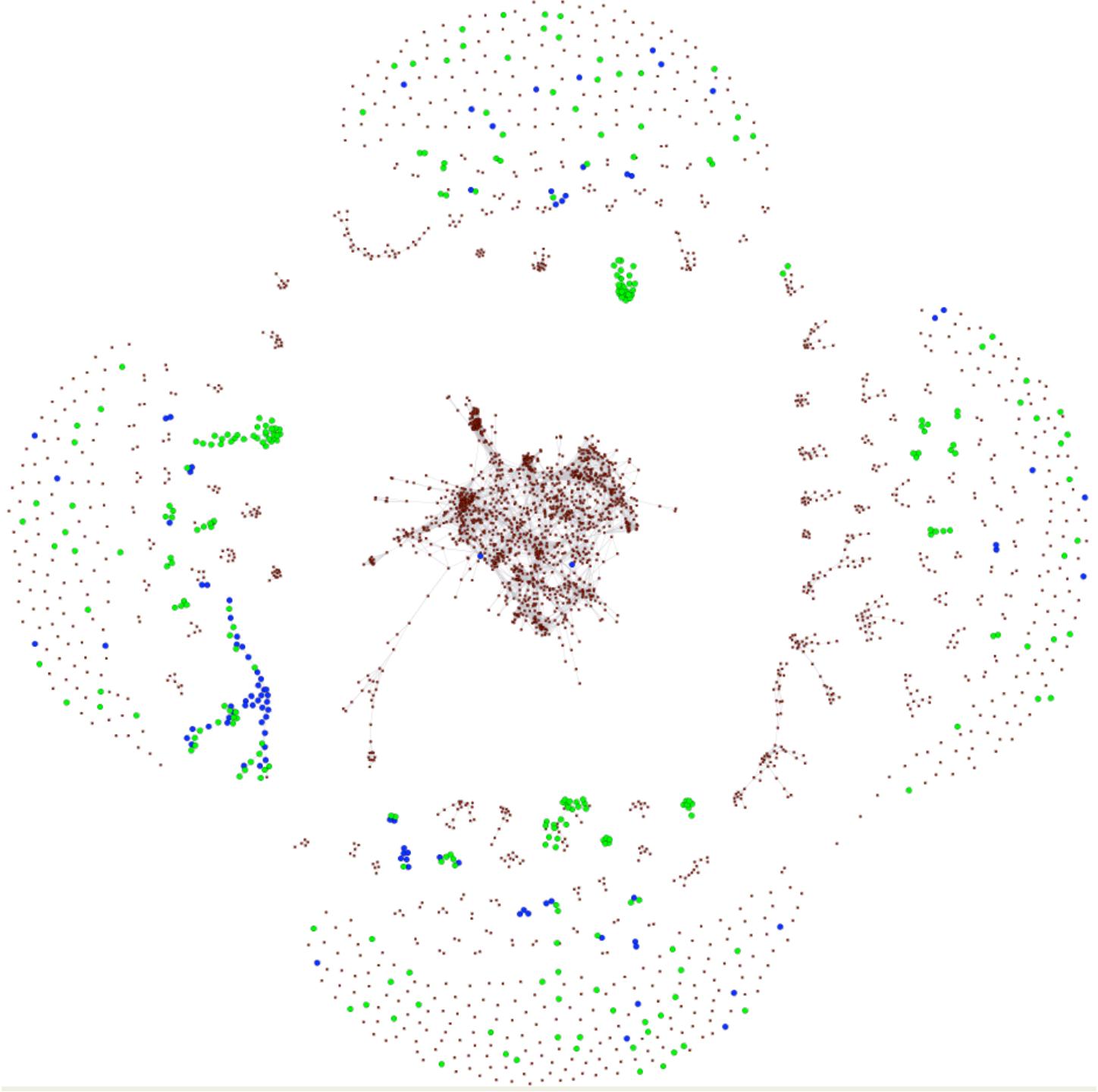

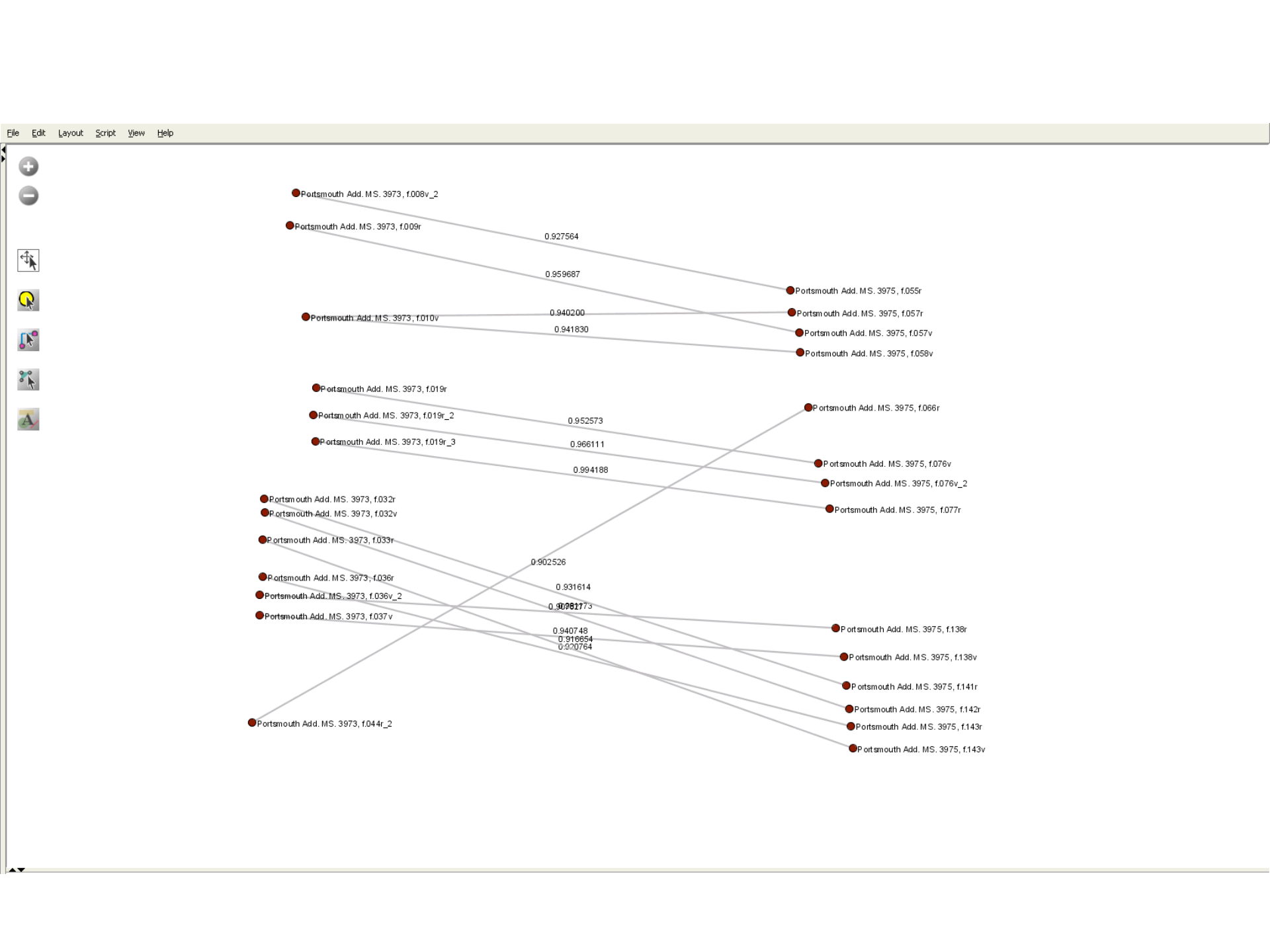
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Portsmouth Add. MS. 3973, f.019r
Portsmouth Add. MS. 3973, f.019r_2
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Portsmouth Add. MS. 3975, f.066r
Portsmouth Add. MS. 3975, f.076v
Portsmouth Add. MS. 3975, f.076v_2
Portsmouth Add. MS. 3975, f.077r
Portsmouth Add. MS. 3975, f.138r
Portsmouth Add. MS. 3975, f.138v
Portsmouth Add. MS. 3975, f.141r
Portsmouth Add. MS. 3975, f.142r
Portsmouth Add. MS. 3975, f.143r
Portsmouth Add. MS. 3975, f.143v

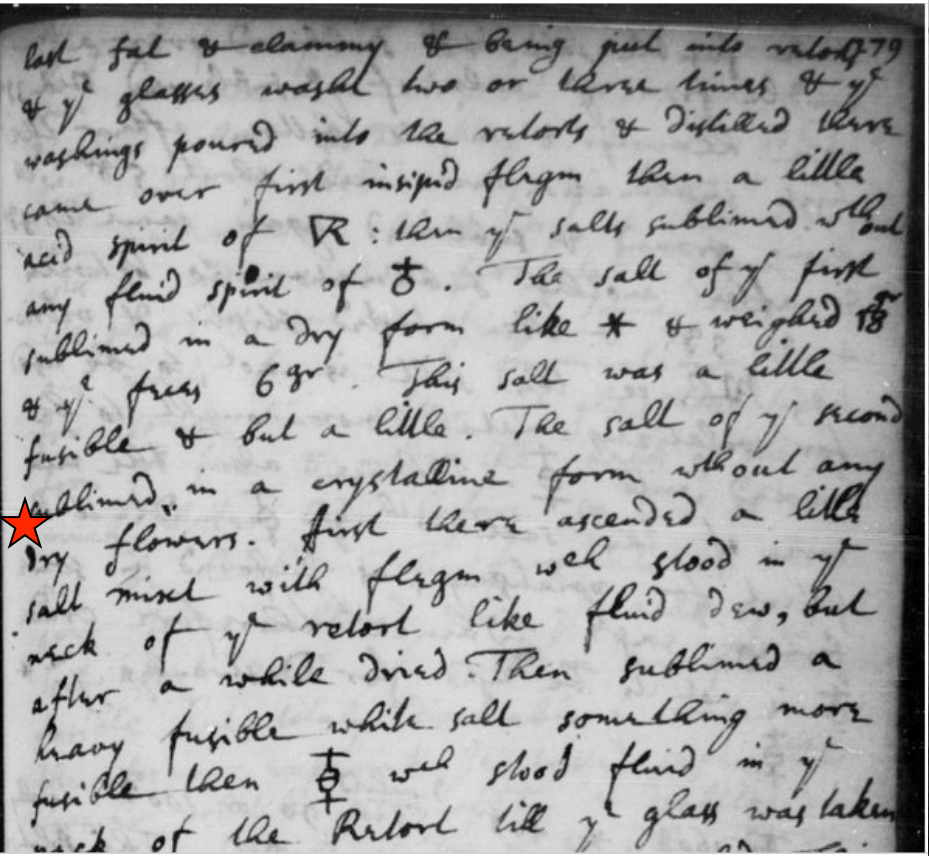
COLL-MS: Portsmouth Add. MS. 3975, f.142r
MS-TITLE: Idea Of a table booke

any fluid spirit of ♄. The salt of the first
sublimed in a dry form like ⁎ & weighed 18gr
& the feces 6gr . This salt was a little
fusible & but a little. The salt of the second
sublimed in a crystalline form with out any
dry flowers. First there ascended a little
salt mixt with flegm which stood in the
neck of the retort like fluid dew, but
after a while dried. Then sublimed a
heavy fusible white salt something more
fusible then ♃ which stood fluid in the
neck of the Retort till the glass was taken
of the fire & then soon congealed. This
cristalline fusible sublimed salt weighed 22 1/2
grains . & the feces which remained below weighd
7gr . So then in this last Experiment the ▽, 𝒜,
♄, ⁎, volatil salt & feces were as 480,
360, 240, 120, 22 1/2, 7 or as DEL[[192]]DEL 64, 48, 32,
16, 3, 1. This last fusible salt ran totaly
per deliquium into a very clear liquor
with out any feces & easily dried again &
in drying became white. Of this salt 3gr
sublimed from Lead ore 12gr , the ore was
not thereby increased in weight nor made
fusible, no not upon a red hot iron, nor
let go any salt in boiling water. Of the
FOLIO[[142v]]FOLIO same fusible salt 4gr sublimed over a
candle from the calx of the sublimed Net 3gr
rose heavily & in the bottom after the
first sublimation remained about 5gr which
being ground & sublimed again came to 4gr
& after another sublimation to between

COLL-MS: Portsmouth Add. MS. 3973, f.032v
MS-TITLE: Experiments

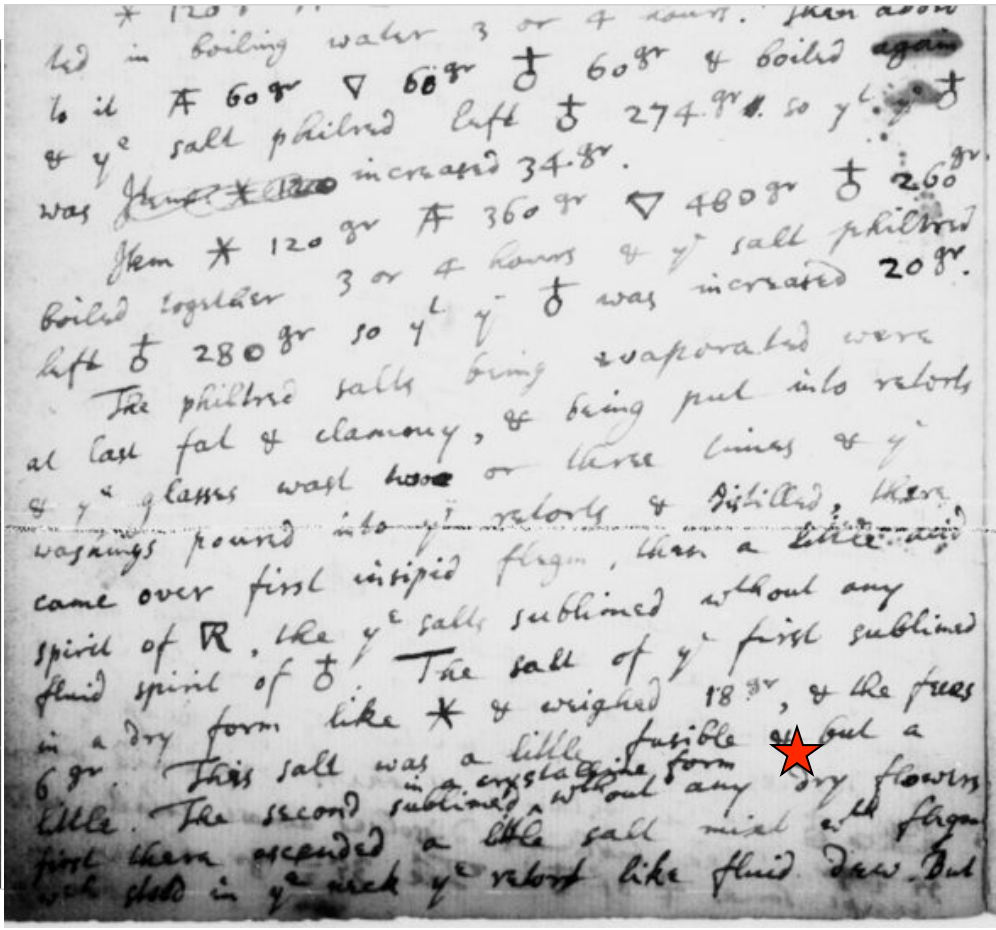
washings poured into the retorts & distilled, there
came over first insipid flegm, then a little acid
spirit of ▽R, the salts sublimed with out any
fluid spirit of ♄. The salt of the first sublimed
in a dry form like ⁎ & weighed 18gr , & the feces
6gr . This salt was a little fusible & but a
little. The second sublimed ADD[[in a crystalline form]]A with out any dry flowers
first there ascended a little salt mixt with flegm
which stood in the neck the retort like fluid dew. But
FOLIO[[33r]]FOLIO after a while dried. Then sublimed a heavy fusible ADD[[white]]ADD salt
something more fusible then ♃ which stood
fluid in the neck of the retort till the glass was
taken off the fire & then soon congealed. This
ADD[[crystalline]]ADD fusible sublimed salt weighed 22 1/2gr . And the
feces which remained below weighed 7gr . So then
in DEL[[this last experi]]DEL this last experiment the ▽. ▽F. ♄.
⁎. volatil salt & feces were as 480. 360. 240.
120. 22 1/2. 7 or as 192. 144. 96. 48. 9. 3. or
as. 64. 48. 32. 16. 3. 1. This last fusible salt ran
totally DEL[[♄ 2 ounces ♌ 1 ounce gave a regulus scarce distinguis]]DEL per deliquium into a
very clear liquor with out any
feces & easily dried again & in drying became white.
Of this salt 3gr being sublimed from Lead ore 12gr the
oare was not thereby ADD[[increased in weight nor]]ADD made fusible not upon a red
hot iron DEL[[&]]DEL nor let go any salt in boiling water. Of
the same fusible salt 4gr sublimed ADD[[over a candle]]ADD from the calx of the sublimed Net
ADD[[3gr]]ADD rose heavily & in the bottom after the first sublimation remained above 5gr
which being ground & sublimed

Portsmouth 3975 f.142r



last fal & clammy & being put into retort 79
& y^e glasses washt two or three times & y^e
washings poured into the retorts & distilled there
came over first insipid flegm then a little
acid spirit of ℞: then y^e salts sublimed without
any fluid spirit of ☿. The salt of y^e first
sublimed in a dry form like ✳ & weighed 18^gr
& y^e fees 6^gr. This salt was a little
fusible & but a little. The salt of y^e second
sublimed in a crystalline form without any
dry flowers. first there ascended a little
salt mixt with flegm wch stood in y^e
neck of y^e retort like fluid dew, but
after a while dried. Then sublimed a
heavy fusible white salt something more
fusible then ☿ wch stood fluid in y^e
neck of the Retort till y^e glass was taken

Portsmouth 3973 f.32v



ted in boiling water 3 or 4 hours. then abou
to it ☥ 60^gr ▽ 60^gr ☿ 60^gr & boiled again
& y^e salt philtred left ☿ 274^gr. so y^t. y^e ☿
was increas'd 34^gr.
Item ✳ 120^gr ☥ 360^gr ▽ 480^gr ☿ 260^gr.
boiled together 3 or 4 hours & y^e salt philtred
left ☿ 280^gr so y^t y^e ☿ was increased 20^gr.
The philtred salts being evaporated were
at last fal & clammy, & being put into retorts
& y^e glasses wash't two or three times & y^e
washings poured into y^e retorts & distilled, there
came over first insipid flegm, then a little acid
spirit of ℞, the y^e salts sublimed without any
fluid spirit of ☿. The salt of y^e first sublimed
in a dry form like ✳ & weighed 18^gr, & the fees
6^gr. This salt was a little fusible & but a
little. The second sublimed in a crystalline form without any dry flowers
first there ascended a little salt mixt with flegm
wch stood in y^e neck y^e retort like fluid dew. But

COLL-MS: Portsmouth Add. MS. 3975, f.142r
MS-TITLE: Idea Of a table booke

any fluid spirit of ♄. The salt of the first
sublimed in a dry form like ⁎ & weighed 18gr
& the feces 6gr . This salt was a little
fusible & but a little. The salt of the second
sublimed in a crystalline form with out any
dry flowers. First there ascended a little
salt mixt with flegm which stood in the
neck of the retort like fluid dew, but
after a while dried. Then sublimed a
heavy fusible white salt something more
fusible then ♃ which stood fluid in the
neck of the Retort till the glass was taken
of the fire & then soon congealed. This
cristalline fusible sublimed salt weighed 22 1/2
grains . & the feces which remained below weighd
7gr . So then in this last Experiment the ▽, 𝔄,
♄, ⁎, volatil salt & feces were as 480,
360, 240, 120, 22 1/2, 7 or as DEL[[192]]DEL 64, 48, 32,
16, 3, 1. This last fusible salt ran totaly
per deliquium into a very clear liquor
with out any feces & easily dried again &
in drying became white. Of this salt 3gr
sublimed from Lead ore 12gr , the ore was
not thereby increased in weight nor made
fusible, no not upon a red hot iron, nor
let go any salt in boiling water. Of the
FOLIO[[142v]]FOLIO same fusible salt 4gr sublimed over a
candle from the calx of the sublimed Net 3gr
rose heavily & in the bottom after the
first sublimation remained about 5gr which
being ground & sublimed again came to 4gr
& after another sublimation to between

COLL-MS: Portsmouth Add. MS. 3973, f.032v
MS-TITLE: Experiments

washings poured into the retorts & distilled, there
came over first insipid flegm, then a little acid
spirit of ♅, the salts sublimed with out any
fluid spirit of ♄. The salt of the first sublimed
in a dry form like ⁎ & weighed 18gr , & the feces
6gr . This salt was a little fusible & but a
little. The second sublimed ADD[[in a crystalline form]]ADD with out any dry flowers
first there ascended a little salt mixt with flegm
which stood in the neck the retort like fluid dew. But
FOLIO[[33r]]FOLIO after a while dried. Then sublimed a heavy fusible ADD[[white]]ADD salt
something more fusible then ♃ which stood
fluid in the neck of the retort till the glass was
taken off the fire & then soon congealed. This
ADD[[crystalline]]ADD fusible sublimed salt weighed 22 1/2gr . And the
feces which remained below weighed 7gr . So then
in DEL[[this last experi]]DEL this last experiment the ▽. ♅. ♄.
⁎. volatil salt & feces were as 480. 360. 240.
120. 22 1/2. 7 or as 192. 144. 96. 48. 9. 3. or
as. 64. 48. 32. 16. 3. 1. This last fusible salt ran
totally DEL[[♄ 2 ounces ♌ 1 ounce gave a regulus scarce distinguis]]DEL per deliquium into a
very clear liquor with out any
feces & easily dried again & in drying became white.
Of this salt 3gr being sublimed from Lead ore 12gr the
oare was not thereby ADD[[increased in weight nor]]ADD made fusible not upon a red
hot iron DEL[[&]]DEL nor let go any salt in boiling water. Of
the same fusible salt 4gr sublimed ADD[[over a candle]]ADD from the calx of the sublimed Net
ADD[[3gr]]ADD rose heavily & in the bottom after the first sublimation remained above 5gr
which being ground & sublimed

COLL-MS: Portsmouth Add. MS. 3975, f.142r
MS-TITLE: Idea Of a table booke

any fluid spirit of ♄. The salt of the first sublimed in a dry form like ☼ & weighed 18gr & the feces 6gr . This salt was a little fusible & but a little. The salt of the second sublimed in a crystalline form with out any dry flowers. First there ascended a little salt mixt with flegm which stood in the neck of the retort like fluid dew, but after a while dried. Then sublimed a heavy fusible white salt something more fusible then ♃ which stood fluid in the neck of the Retort till the glass was taken of the fire & then soon congealed. This cristalline fusible sublimed salt weighed 22 1/2 grains . & the feces which remained below weighd 7gr . So then in this last Experiment the ▽, ☿, ♄, ☼, volatil salt & feces were as 480, 360, 240, 120, 22 1/2, 7 or as DEL[[192]]DEL 64, 48, 32, 16, 3, 1. This last fusible salt ran totaly per deliquium into a very clear liquor with out any feces & easily dried again & in drying became white. Of this salt 3gr sublimed from Lead ore 12gr , the ore was not thereby increased in weight nor made fusible, no not upon a red hot iron, nor let go any salt in boiling water. Of the FOLIO[[142v]]FOLIO same fusible salt 4gr sublimed over a candle from the calx of the sublimed Net 3gr rose heavily & in the bottom after the first sublimation remained about 5gr which being ground & sublimed again came to 4gr & after another sublimation to between

COLL-MS: Portsmouth Add. MS. 3973, f.032v
MS-TITLE: Experiments

washings poured into the retorts & distilled, there came over first insipid flegm, then a little acid spirit of ▽R, the salts sublimed with out any fluid spirit of ♄. The salt of the first sublimed in a dry form like ☼ & weighed 18gr , & the feces 6gr . This salt was a little fusible & but a little. The second sublimed ADD[[in a crystalline form]]ADD with out any dry flowers first there ascended a little salt mixt with flegm which stood in the neck the retort like fluid dew. But FOLIO[[33r]]FOLIO after a while dried. Then sublimed a heavy fusible ADD[[white]]ADD salt something more fusible then ♃ which stood fluid in the neck of the retort till the glass was taken off the fire & then soon congealed. This ADD[[crystalline]]ADD fusible sublimed salt weighed 22 1/2gr . And the feces which remained below weighed 7gr . So then in DEL[[this last experi]]DEL this last experiment the ▽. ▽F. ♄. ☼. volatil salt & feces were as 480. 360. 240. 120. 22 1/2. 7 or as 192. 144. 96. 48. 9. 3. or as. 64. 48. 32. 16. 3. 1. This last fusible salt ran totally DEL[[♄ 2 ounces ♌ 1 ounce gave a regulus scarce distinguis]]DEL per deliquium into a very clear liquor with out any feces & easily dried again & in drying became white. Of this salt 3gr being sublimed from Lead ore 12gr the oare was not thereby ADD[[increased in weight nor]]ADD made fusible not upon a red hot iron DEL[[&]]DEL nor let go any salt in boiling water. Of the same fusible salt 4gr sublimed ADD[[over a candle]]ADD from the calx of the sublimed Net ADD[[3gr]]ADD rose heavily & in the bottom after the first sublimation remained above 5gr which being ground & sublimed

COLL-MS: Portsmouth Add. MS. 3975, f.142r
MS-TITLE: Idea Of a table booke

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fusible & but a little. The salt of the second
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dry flowers. First there ascended a little
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let go any salt in boiling water. Of the
FOLIO[[142v]]FOLIO same fusible salt 4gr sublimed over a
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COLL-MS: Portsmouth Add. MS. 3973, f.032v
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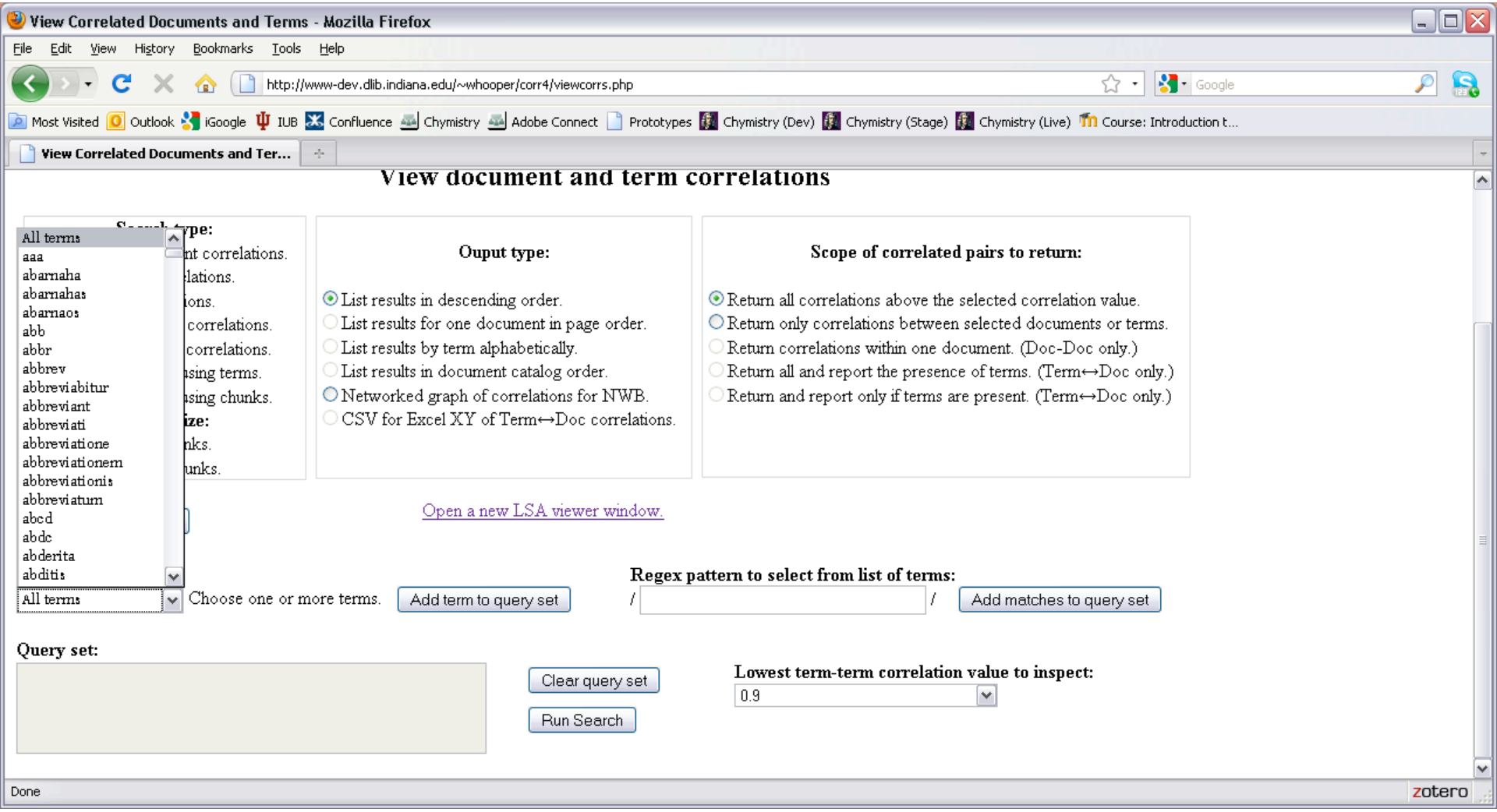
ADD[[3gr]]ADD rose heavily & in the bottom after the first sublimation remained above 5gr
which being ground & sublimed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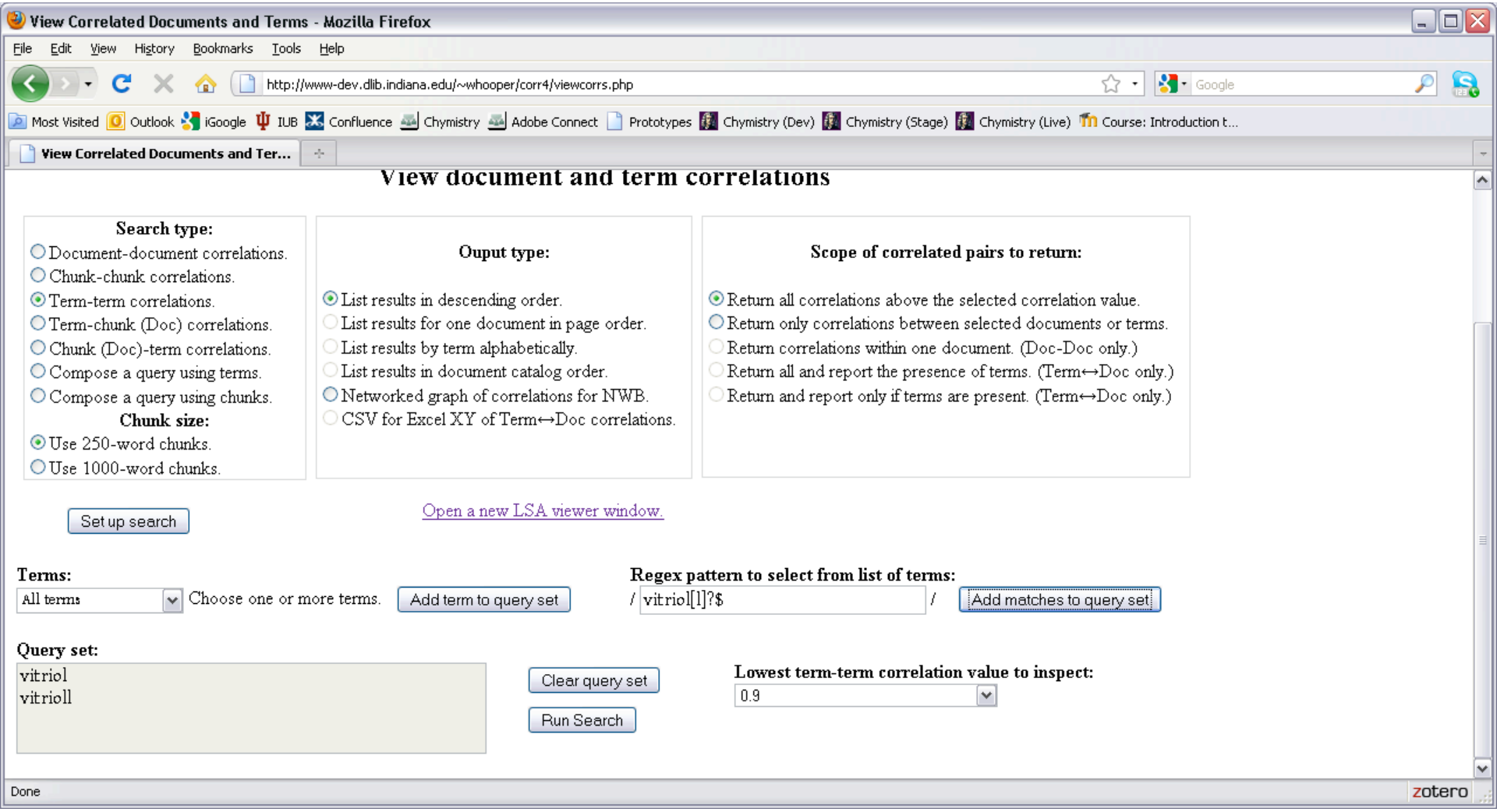
abbreviatione
abbreviationem
abbreviationis
abbreviatum
abcd
abdc
abderita
abditis
All terms
Choose one or more terms.
Add term to query set
Ouput type:
List results in descending order.
List results for one document in page order.
List results by term alphabetically.
List results in document catalog order.
Networked graph of correlations for NWB.
CSV for Excel XY of Term↔Doc correlations.
Scope of correlated pairs to return:
Return all correlations above the selected correlation value.
Return only correlations between selected documents or terms.
Return correlations within one document. (Doc-Doc only.)
Return all and report the presence of terms. (Term↔Doc only.)
Return and report only if terms are present. (Term↔Doc only.)
Open a new LSA viewer window.
Regex pattern to select from list of terms:
/ / Add matches to query set
Query set:
Clear query set
Run Search
Lowest term-term correlation value to inspect:
0.9
Done
zotero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View Correlated Documents and Ter...
View document and term correlations
Search type:
Document-document correlations.
Chunk-chunk correlations.
Term-term correlations.
Term-chunk (Doc) correlations.
Chunk (Doc)-term correlations.
Compose a query using terms.
Compose a query using chunks.
Chunk size:
Use 250-word chunks.
Use 1000-word chunks.
Ouput type:
List results in descending order.
List results for one document in page order.
List results by term alphabetically.
List results in document catalog order.
Networked graph of correlations for NWB.
CSV for Excel XY of Term↔Doc correlations.
Scope of correlated pairs to return:
Return all correlations above the selected correlation value.
Return only correlations between selected documents or terms.
Return correlations within one document. (Doc-Doc only.)
Return all and report the presence of terms. (Term↔Doc only.)
Return and report only if terms are present. (Term↔Doc only.)
Set up search
Open a new LSA viewer window.
Terms:
All terms
Choose one or more terms.
Add term to query set
Regex pattern to select from list of terms:
/ vitriol[l]?$ /
Add matches to query set
Query set:
vitriol
vitriol
Clear query set
Run Search
Lowest term-term correlation value to inspect:
0.9
Done
zotero

alom	~	vitriol	0.874430
vitriol	~	vitriols	0.802967
hungary	~	vitriol	0.797186
possesses	~	vitriol	0.775876
oars	~	vitriol	0.751007
vitriol	~	†	0.740279
preferred	~	vitriol	0.739874
approaches	~	vitriol	0.729288
minerals	~	vitriol	0.718933
goldish	~	vitriol	0.711289
asketh	~	vitriol	0.702583
laxative	~	vitriol	0.687676
horrid	~	vitriol	0.680243
jaspis	~	vitriol	0.674377
desireth	~	vitriol	0.665986
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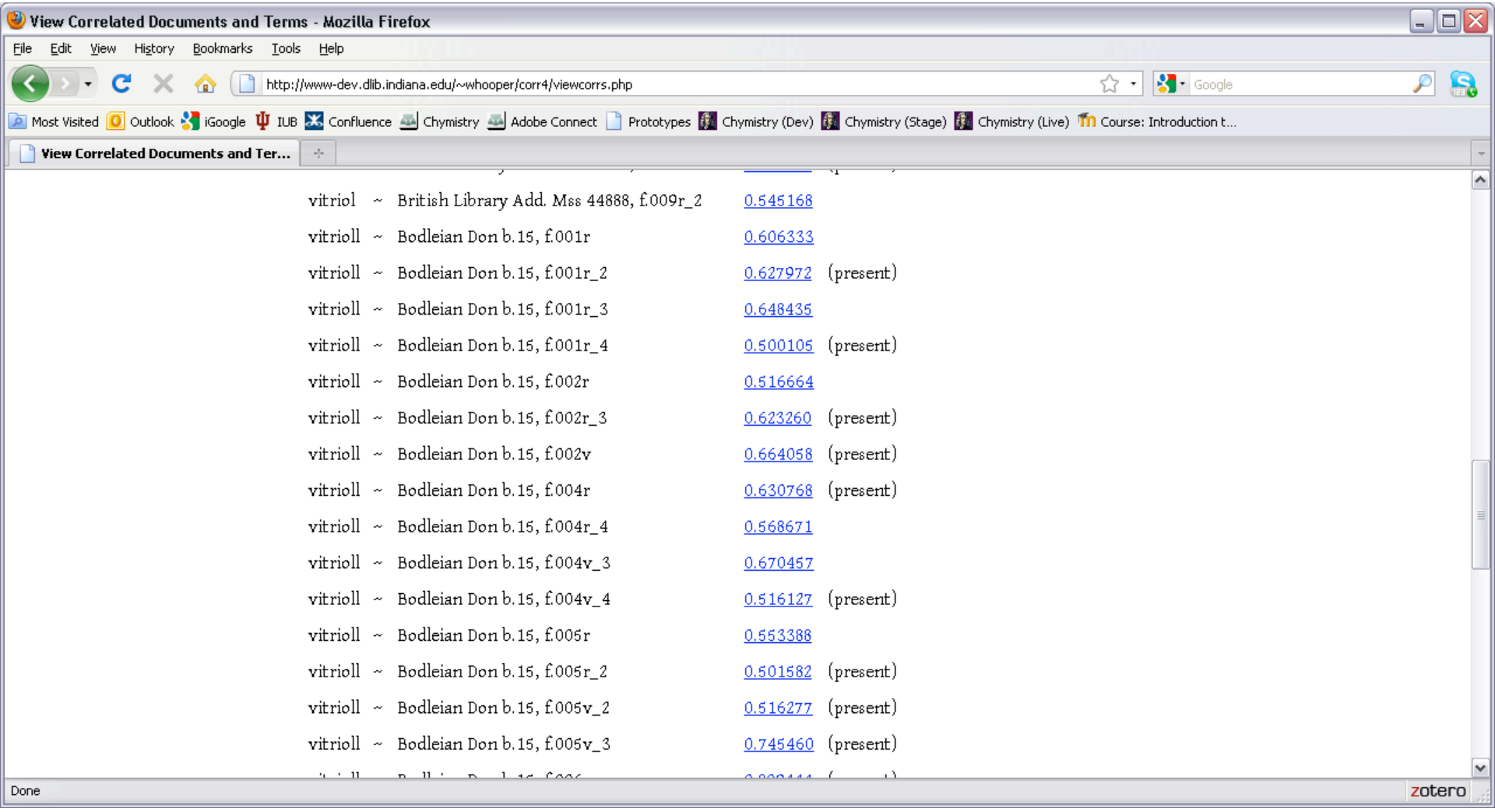
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View Correlated Documents and Ter...
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vitrioll ~ Bodleian Don b.15, f.001r_2 0.627972 (present)
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vitrioll ~ Bodleian Don b.15, f.001r_4 0.500105 (present)
vitrioll ~ Bodleian Don b.15, f.002r 0.516664
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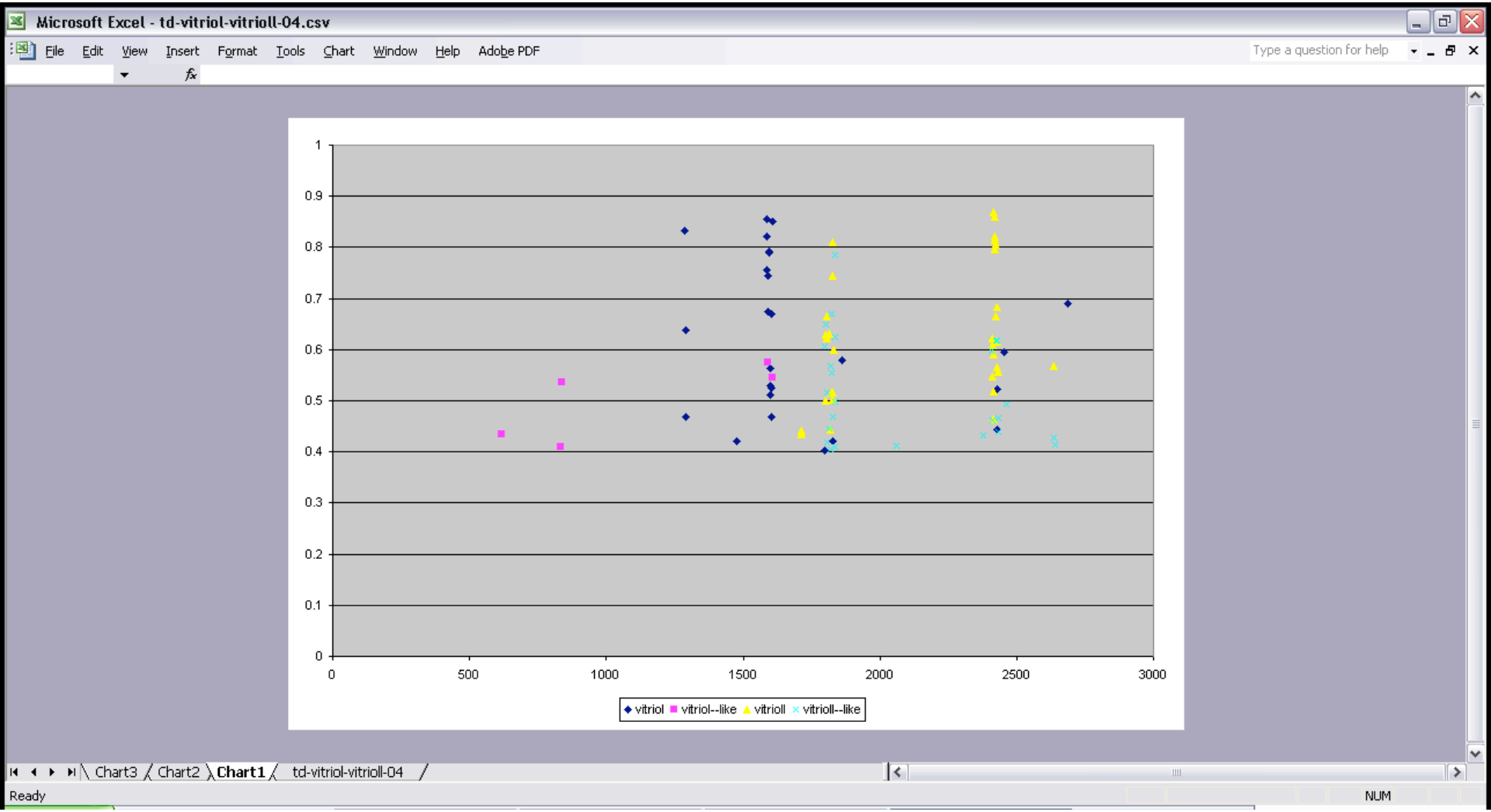
vitrioll ~ Bodleian Don b.15, f.004v_4 0.516127 (present)
vitrioll ~ Bodleian Don b.15, f.005r 0.553388
vitrioll ~ Bodleian Don b.15, f.005r_2 0.501582 (present)
vitrioll ~ Bodleian Don b.15, f.005v_2 0.516277 (present)
vitrioll ~ Bodleian Don b.15, f.005v_3 0.745460 (present)
Done
zotero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0.5
0.4
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0.2
0.1
0
0
500
1000
1500
2000
2500
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vitriol
vitriol--like
vitrioll
vitrioll--like
Chart3
Chart2
Chart1
td-vitriol-vitrioll-04
Ready
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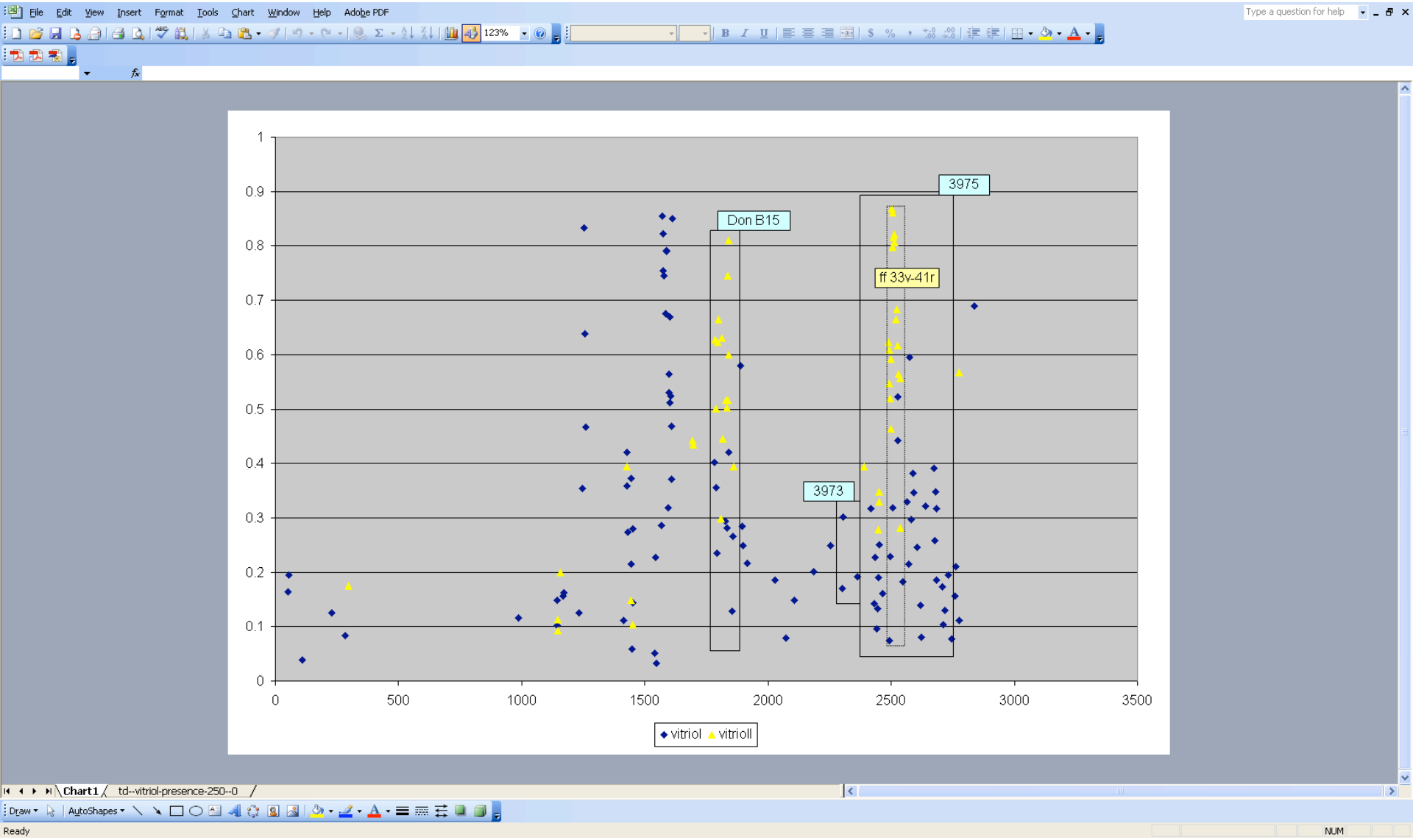
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Type a question for help
123%
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0.7
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500
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2000
2500
3000
3500
3975
Don B15
ff 33v-41r
3973
vitriol
vitrioll
Chart1
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Draw
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